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#51 Formal Drawings  
8/7/01  
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**UNG ET AL.**

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July 10, 2001

**SUBMISSION OF FORMAL DRAWINGS**

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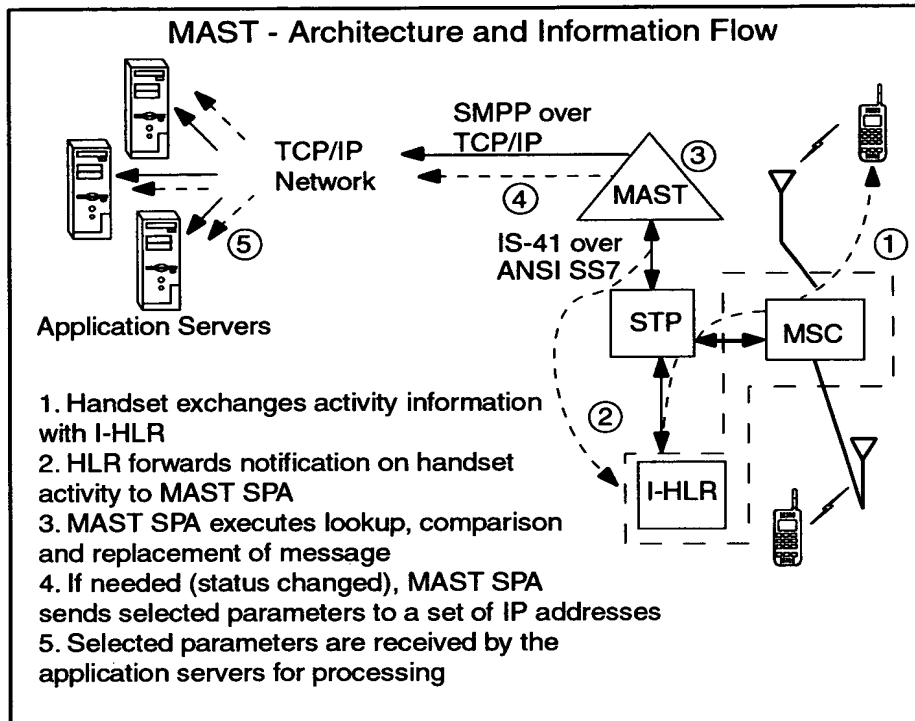
Sir:

Please accept the herewith 17 sheets of formal drawings on A4 size paper of Figures 1 through 13, which are in lieu of the informal drawings filed earlier.

Respectfully submitted,

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*MAST Architecture and Information Flow*

**FIG. 1**

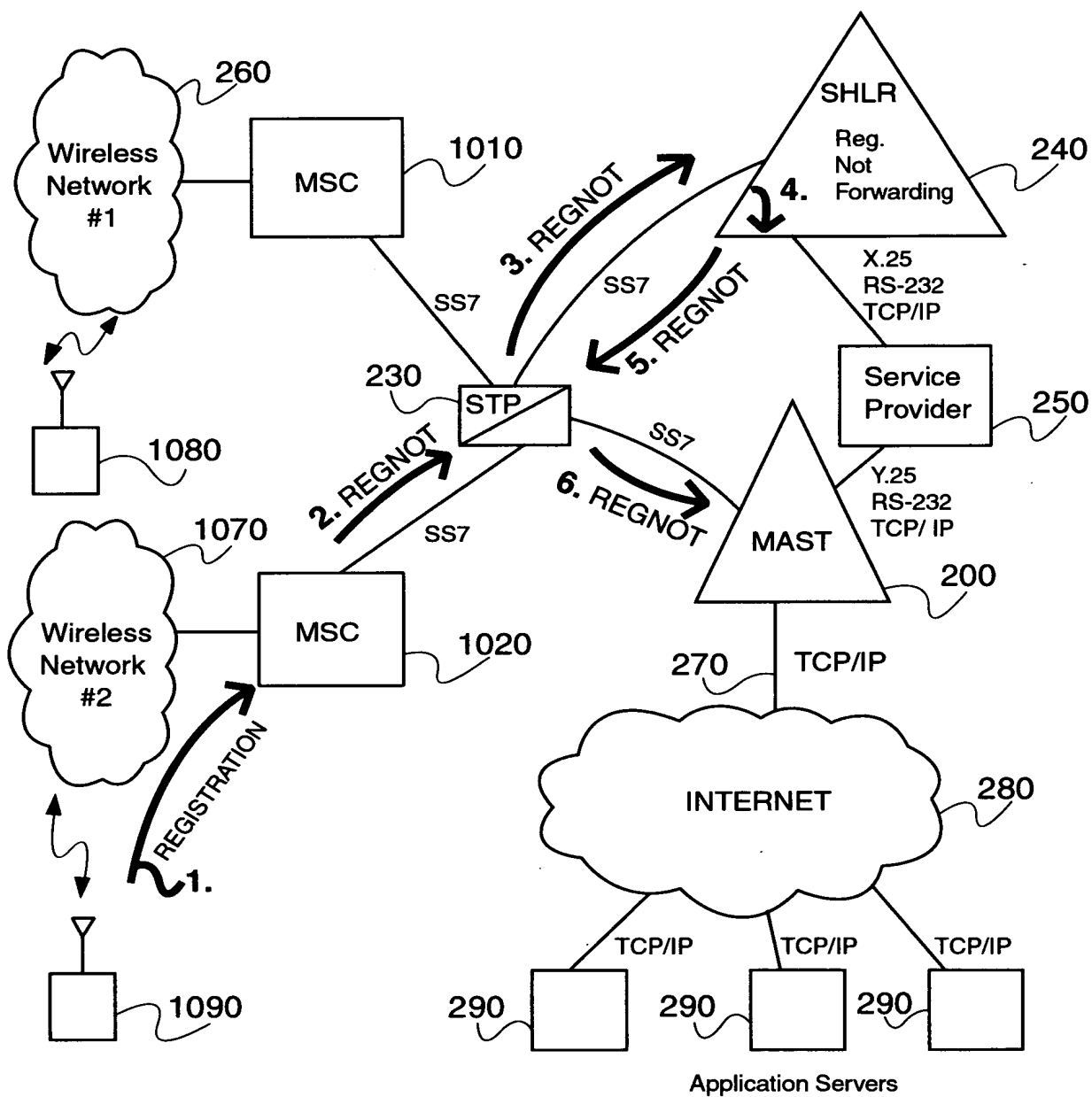


FIG. 2

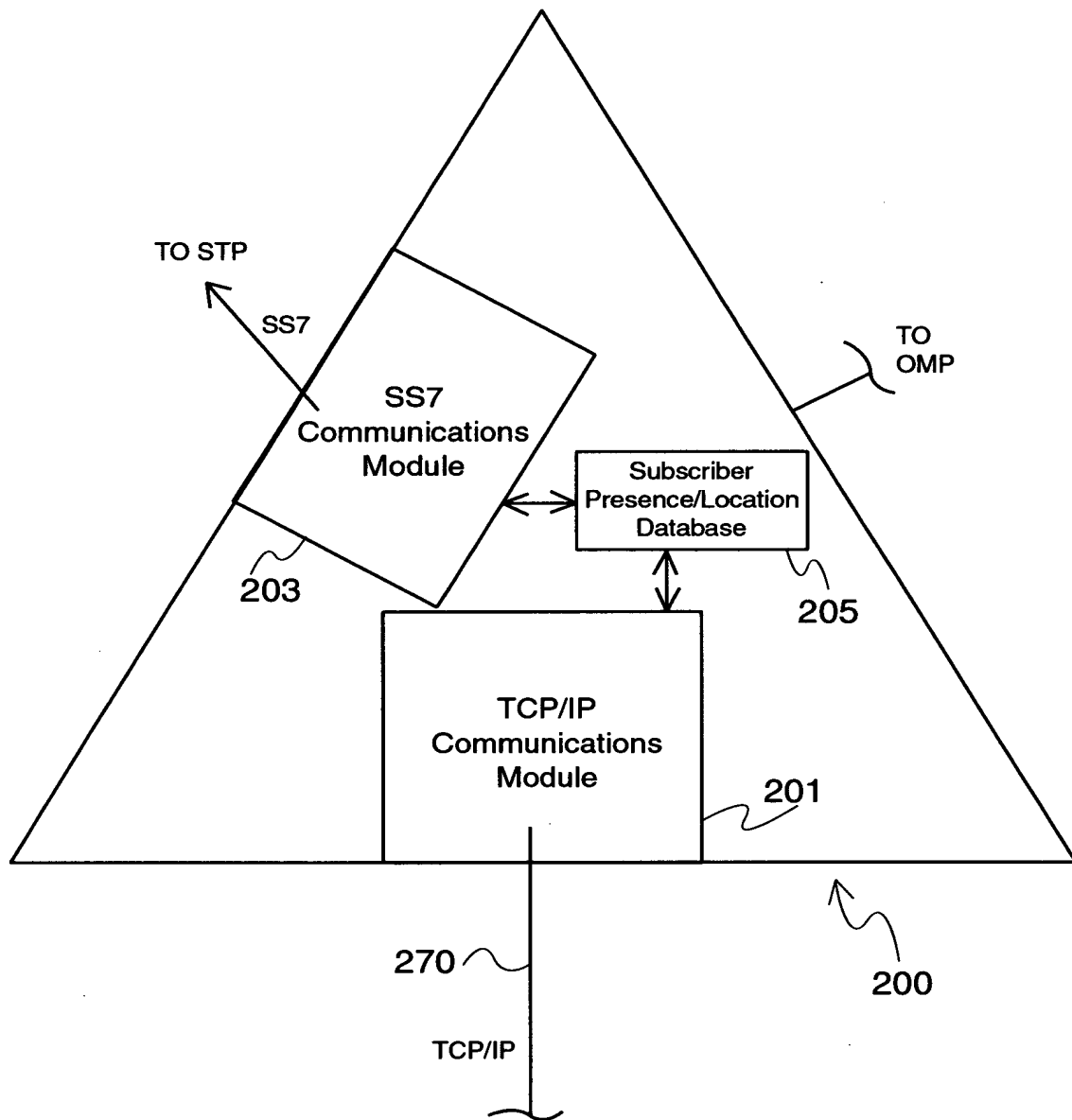


FIG. 2A

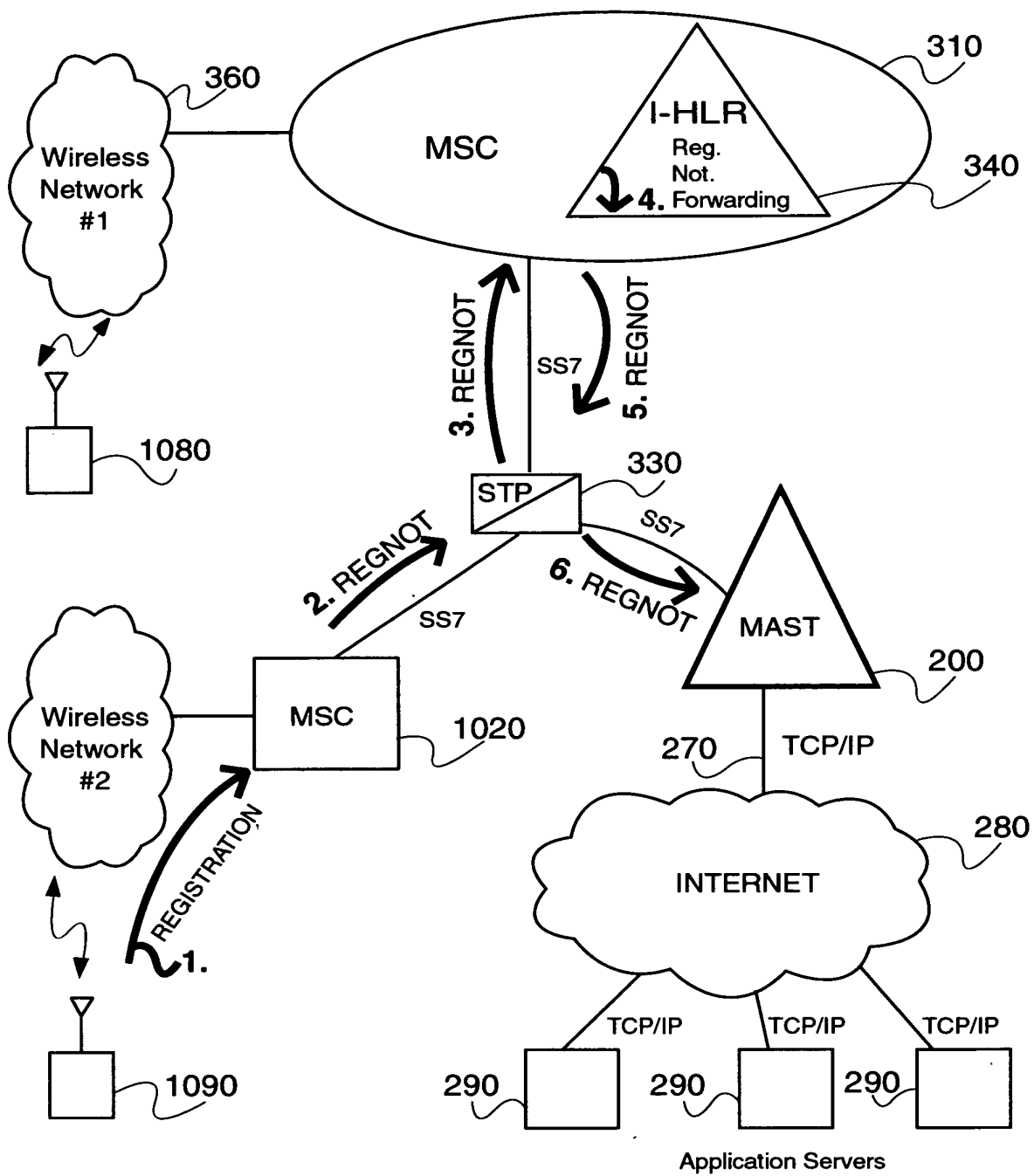


FIG. 3

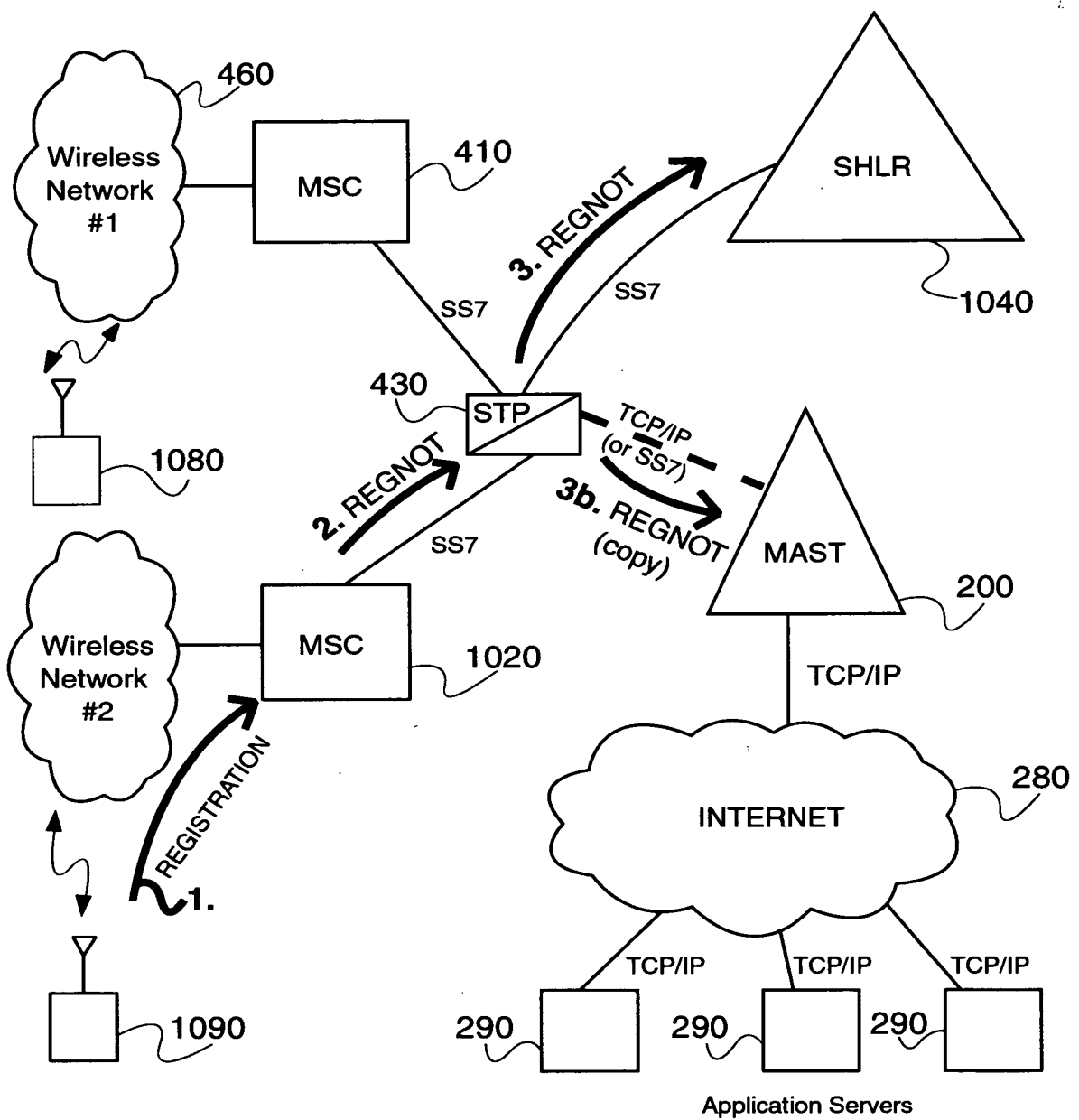


FIG. 4

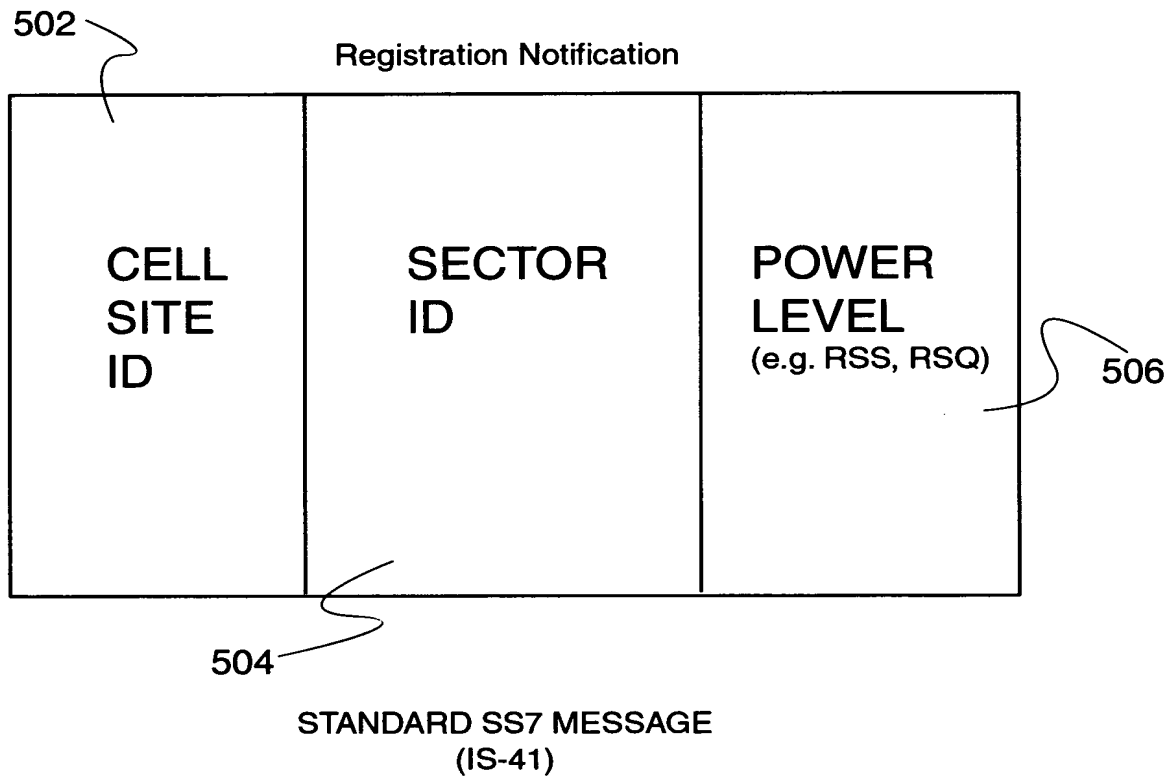


FIG. 5A

| RegistrationNotification INVOKE Parameters |                  |
|--|------------------|
| Field                                      | Value            |
| Identifier                                 | SET [NATIONAL18] |
| Length                                     | variable octets  |
| Contents                                   |                  |
| ElectronicSerialNumber                     |                  |
| MobileIdentificationNumber                 |                  |
| MSCID (Serving MSC)                        |                  |
| QualificationInformationCode               |                  |
| SystemMyTypeCode (Serving MSC or VLR)      |                  |
| AvailabilityType                           |                  |
| BorderCellAccess                           |                  |
| ControlChannelData                         |                  |
| ExtendedMSCID (VLR)                        |                  |
| LocationAreaID                             |                  |
| PC_SSN (Serving MSC or VLR)                |                  |
| ReceivedSignalQuality                      |                  |
| ReportType                                 |                  |
| SenderIdentificationNumber                 |                  |
| SMS_ Address                               |                  |
| SMS_ MessageWaitingIndicator               |                  |
| SystemAccessData                           |                  |
| SystemAccessType                           |                  |
| SystemCapabilities                         |                  |
| TerminalType                               |                  |
| TransactionCapability                      |                  |

RegistrationNotification INVOKE Parameters

FIG. 5B (Prior Art)



Mobile Subscriber Inactive

Shut Down  
Alert

STANDARD SS7 MESSAGE  
(IS-41)

FIG. 6

## MSInactive

This operation was named CSSInactive prior to this revision of the Interim Standard.

The MSInactive operation is used to indicate that an MS is inactive. The MSInactive operation is also used by the Serving VLR to notify the HLR of the cancellation of an MS's registration. The MSInactive operation is used by the HLR to provide the MS's CallHistoryCount to the AC when the SSD is shared with the VLR, and the VLR cancels the MS's registration.

The MSInactive operation is initiated with a TCAP INVOKE (LAST). This is carried by a TCAP QUERY WITH PERMISSION package. The Parameter Set is encoded as follows:

**Table 66 MSInactive INVOKE Parameters**

| MSInactive INVOKE Parameters |                   |      |           | Timer: MSIT |
|------------------------------|-------------------|------|-----------|-------------|
| Field                        | Value             | Type | Reference | Notes       |
| Identifier                   | SET [NATIONAL 18] | M    | 6.3.2.1   |             |
| Length                       | variable octets   | M    | 6.3.2.1   |             |
| Contents                     |                   |      |           |             |
| ElectronicSerialNumber       |                   | M    | 6.5.2.63  |             |
| MobileIdentificationNumber   |                   | M    | 6.5.2.81  |             |
| CallHistoryCount             |                   | O    | 6.5.2.18  | a           |
| DeregistrationType           |                   | O    | 6.5.2.55  | b           |
| LocationAreaID               |                   | O    | 6.5.2.77  | c           |
| SenderIdentificationNumber   |                   | O    | 6.5.2.116 | d           |
| SMS_MessageWaitingIndicator  |                   | O    | 6.5.2.129 | e           |

### Notes:

- Include if MS registration is canceled and if the SSD is shared.
- Include from VLR to HLR and HLR to AC for MS deregistration.
- May be included from MSC-V to VLR. Usage in the HLR is not defined.
- Include to identify the functional entity sending this message.
- Include to indicate that an SMS message is pending delivery.

**FIG. 6B**

|               |              |                           |          |
|---------------|--------------|---------------------------|----------|
| IP<br>Address | Mobile<br>ID | Presence<br>Time/<br>Date | Location |
|---------------|--------------|---------------------------|----------|

IP MESSAGE TO APPLICATION SERVER  
( e.g., to Chat Server)

FIG. 7A

| IP<br>Address | Mobile<br>ID | Log | Presence Time/Date | Location |
|---------------|--------------|-----|--------------------|----------|
|               |              | #1  |                    |          |
|               |              | #2  |                    |          |
|               |              | #3  |                    |          |
|               |              | #4  |                    |          |
|               |              | #5  |                    |          |
|               |              | #6  |                    |          |

IP MESSAGE TO APPLICATION SERVER

FIG. 7B

SAMPLE OF TABLE

| MSID             | ACTIVE<br>Y/N | LAST<br>DATE/TIME | PARAMETER<br>1 | PARAMETER<br>2 | PARAMETER<br>3 |
|------------------|---------------|-------------------|----------------|----------------|----------------|
| COMPARE<br>FIELD | Y             | N                 | Y              | N              | Y              |
| SEND<br>FIELD    | Y             | Y                 | Y              | Y              | Y              |
| 9083067462       | Y             | 120314520000      | XX             | YY             | ZZ             |

FIG. 8

SAMPLE DECISION TREE

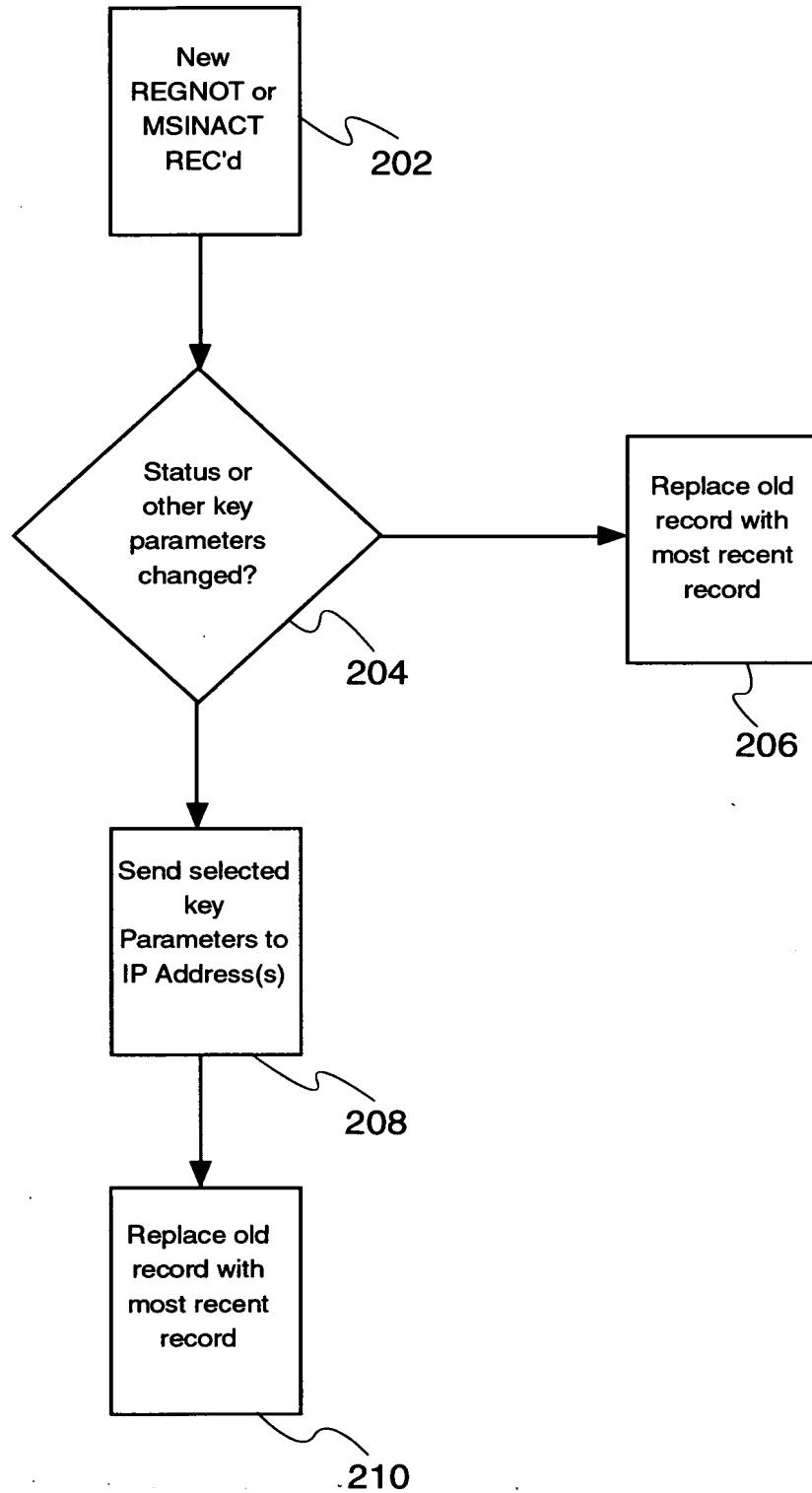


FIG. 9

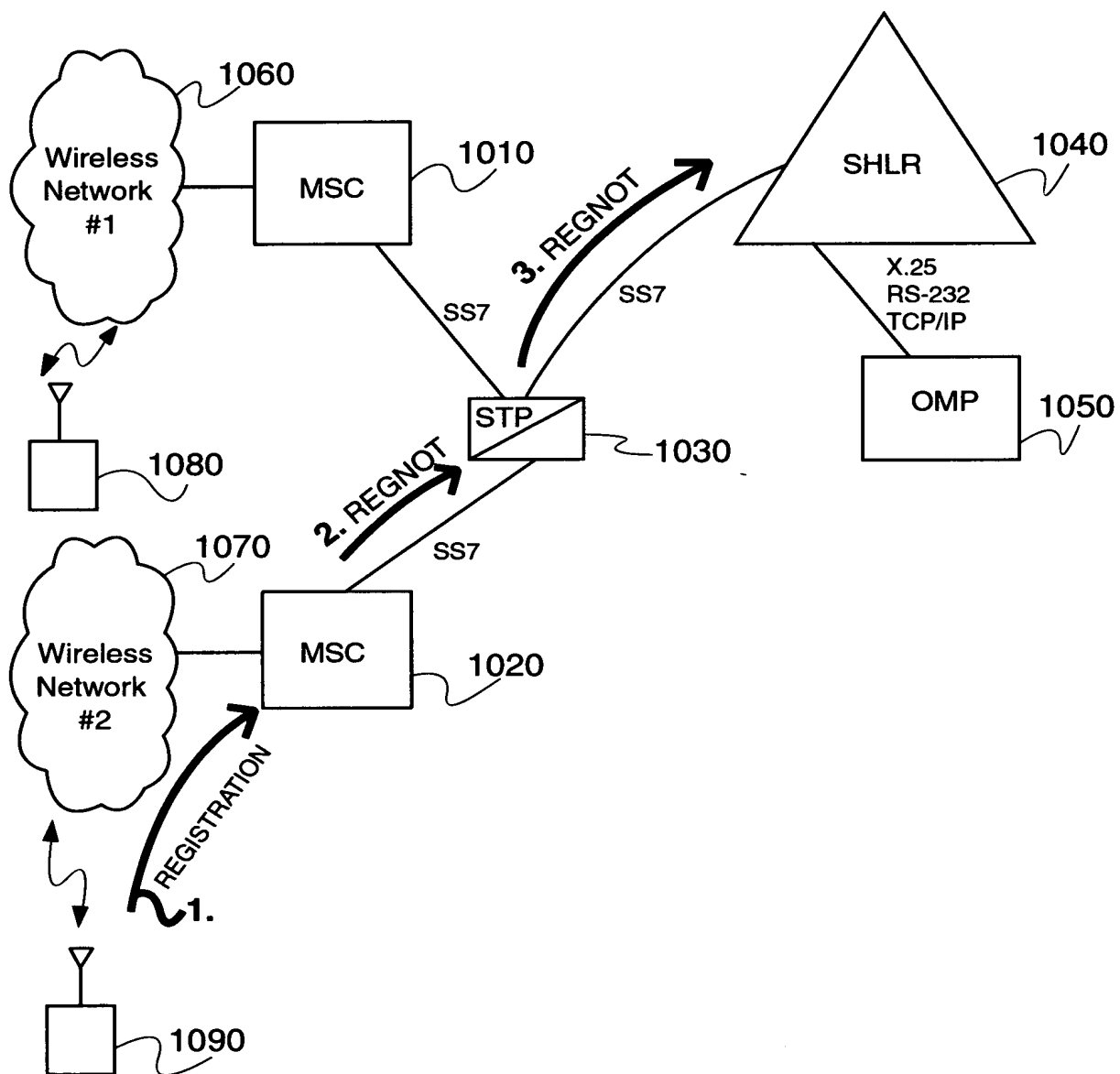


FIG. 10

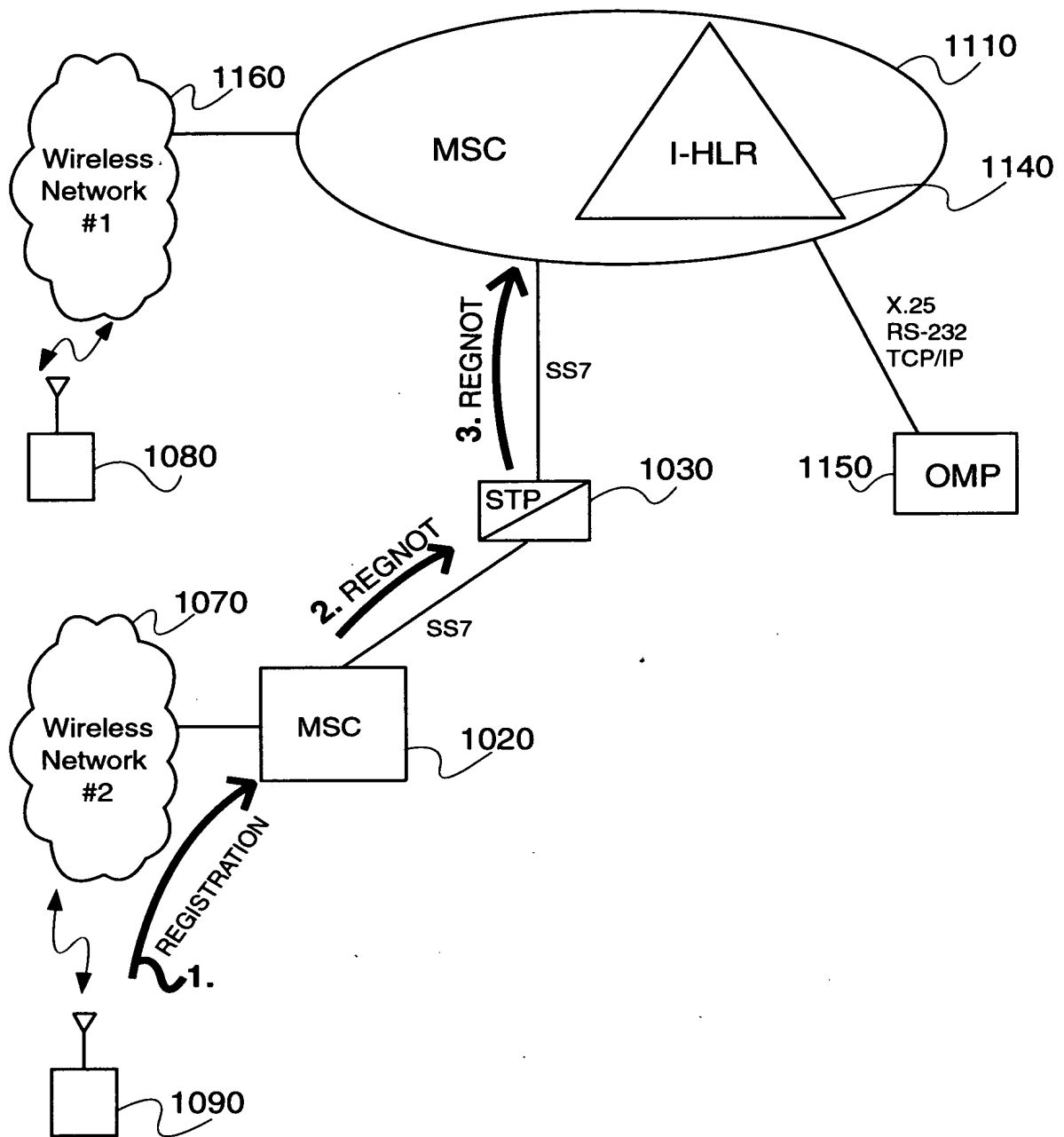


FIG. 11



Automatic On-line or Off-Line Notification Chat Scenario

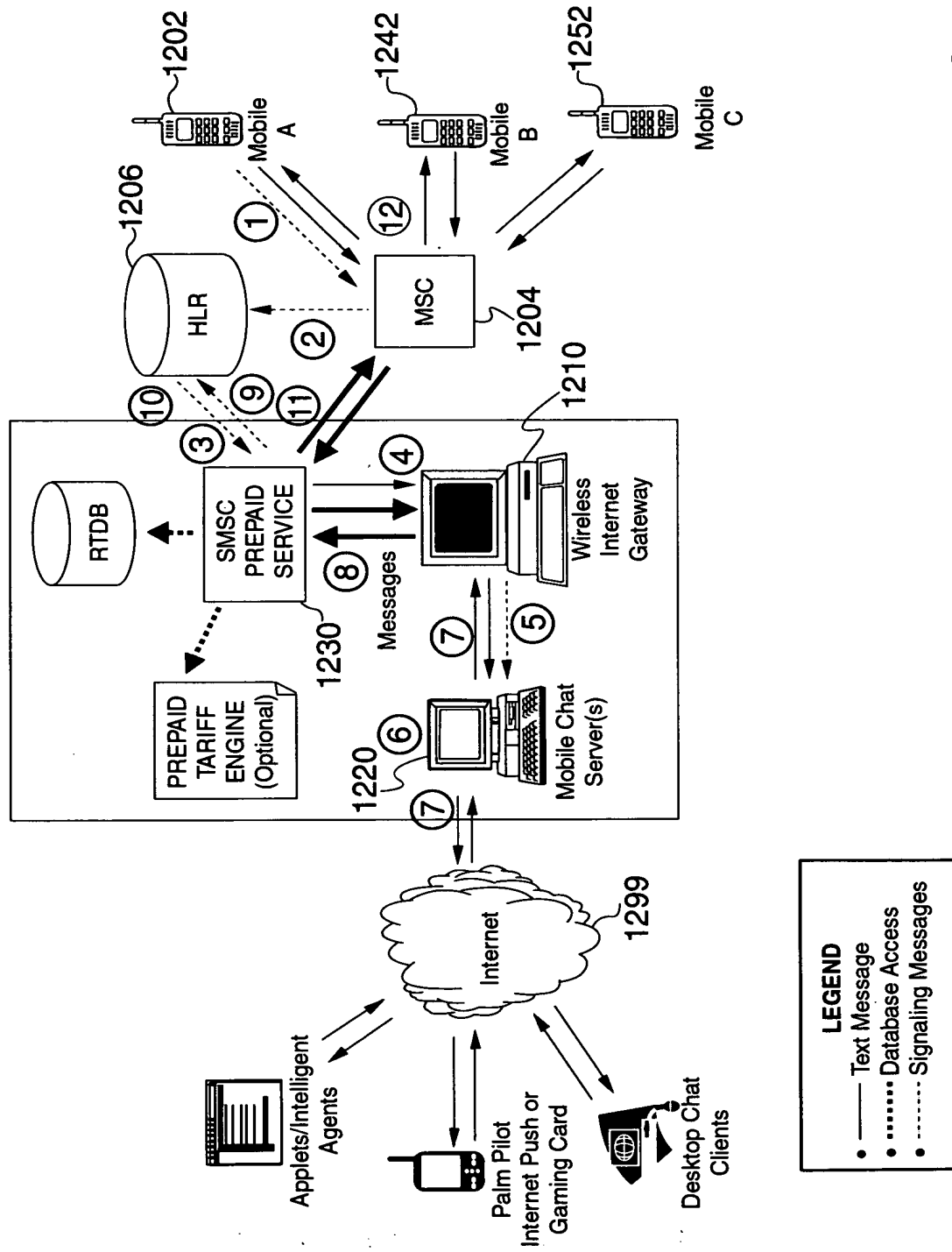


FIG.12

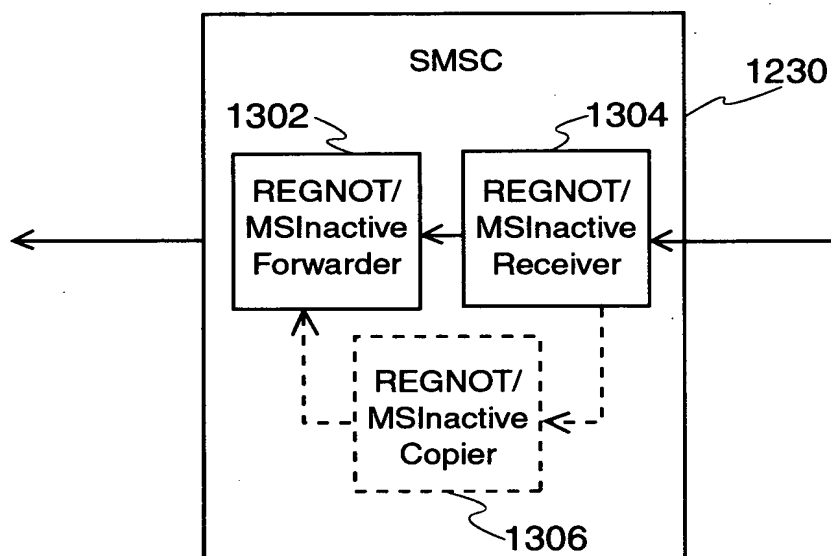


FIG. 13